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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,542	07/25/2002	Eileen Heider	2002-019	1274
32170	7590	03/13/2006	EXAMINER	
U.S. ARMY TACOM-ARDEC ATTN: AMSTRA-AR-GCL BLDG 3 PICATINNY ARSENAL, NJ 07806-5000			CRAIG, DWIN M	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,542

Applicant(s)

HEIDER ET AL.

Examiner

Dwin M. Craig

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-30 have been presented for Examination.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "System and Method of Model based Control".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 12-17, 29 and 30 are rejected under 35 USC § 102(b) as being anticipated by "Model-Based Programming for Programmable Logical Controllers" by Karsten Lemmer, Bernhard Ober and Eckehard Schieder hereafter referred to as *Lemmer et al.*

- 3.1 As regards independent claims 1, 29 & 30 and using independent claim 1 as an example, *Lemmer et al.* discloses,

A model based controller system, comprising: at least one model including at least one process step; (Figure 1 page 4474), at least one controller that generates at least one control command; (page 4477 Figure 7 and the discussion of controlling the plant "Coupling between

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the Plant and Controller”), *at least one component responsive to the at least one control command*, (page 4477, any of the items in Figure 7), *wherein said at least one component receives the at least one control command from said at least one controller*; (page 4477 the component could be the “store” “mould” or “container” as shown in Figure 7) *and at least one communicative coordination that communicatively coordinates said at least one model with said at least one controller*, (page 4475 Figure 2 clearly shows the controller model integrated with the plant model which teaches communicative coordination) *wherein the at least one control command is generated in accordance with the at least one process step*, (page 4475 Figure 2 shows a bubble labeled, “process and problem description”) *and wherein at least one of the at least one process step is varied in accordance with the at least one component information element* (page 4475 Figure 2 “compute control algorithm” teaches variance of a process step, see also pages 4478 & 4479 and page 4476 see the discussion regarding “Layer 3, Instrumentation Model” *material flow model and sensors*).

3.2 As regards dependent claim 2 *Lemmer et al.* discloses *data flow* (page 4475 Figure 2).

3.3 As regards dependent claim 3 *Lemmer et al.* discloses more than one component (page 4476 Figure 5).

3.4 As regards dependent claim 4 *Lemmer et al.* discloses a *development mode* (page 4475 Figure 2 “generate code”).

3.5 As regards dependent claim 5 *Lemmer et al.* discloses *execution mode* (Conclusion page 4479).

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3.6 As regards dependent claim 6 *Lemmer et al.* discloses *recipe* (page 4478, 4.1

Specifications, “*In our case a specification is sufficient saying our systems is to produce coins according to the recipe given in the workplace model... ”*).

3.6 As regards dependent claim 12 *Lemmer et al.* discloses a *programmable Logic Controller* (page 4474 ABSTRACT & TITLE).

3.7 As regards dependent claim 13 *Lemmer et al.* discloses *code for communications* (page 4475 Figure 2, implementation, hardware, data I/O information and “generate code”).

3.8 As regards dependent claim 14 *Lemmer et al.* discloses *recipe* (page 4478, 4.1 Specifications, “*In our case a specification is sufficient saying our systems is to produce coins according to the recipe given in the workplace model... ”*).

3.9 As regards dependent claims 15, 16 & 17 *Lemmer et al.* discloses at least one *model* (page 4475 Figure 2 “plant model”).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 7-11 and 18-28 are rejected under 35 USC § 103(a) as being unpatentable over “Model-Based Programming for Programmable Logical Controllers” by Karsten Lemmer, Bernhard Ober and Eckehard Schieder hereafter referred to as *Lemmer et al.* in view of US Patent 6,438,534 *Sorgel* hereafter referred to as *Sorgel*.

4.1 As regards independent claim 1, see section 3 of this Office Action.

4.2 As regard dependent claims 7-9 *Lemmer et al.* does not expressly disclose servers.

Sorgel teaches servers communicatively coupled (figures 1-3).

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made to have combined the teachings of *Lemmer et al.* with the network server methods of *Sorgel* because, of the advantages of *remote optimization* (see *Sorgel* Col. 2 lines 38-36).

4.3 As regards dependent claim 10 *Lemmer et al.* teaches a control system for real-time control, (page 2274, Figure 1).

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4.4 As regards dependent claim 11 *Lemmer et al.* discloses a valve and a sensor (page 4476 Figure 5). However, *Lemmer et al.* does not expressly disclose a motor.

Sorgal discloses motors (Figure 1).

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made to have combined the teachings of *Lemmer et al.* with the network server methods of *Sorgel* because, of the advantages of *remote optimization* (see *Sorgel* Col. 2 lines 38-36).

4.5 As regards dependent claims 18-24 *Lemmer et al.* does not expressly disclose a user interface with programming tools.

Sorgal teaches a User Interface (Figure 2 item 12), with programming tools (Col. 4 lines 27-35).

It would have been obvious, to one of ordinary skill in the art, at the time the invention was made to have combined the teachings of *Lemmer et al.* with the network server methods of *Sorgel* because, of the advantages of *remote optimization* (see *Sorgel* Col. 2 lines 38-36 and Col. 6 lines 42-46).

4.6 As regards dependent claims 25-28 *Lemmer et al.* teaches simulation (page 4474, “ The model of the control system can be simulated and analyzed without further modifications by simulators and programs for mathematical analysis.”).

Conclusion

5. Claims 1-30 have been Examined and rejected.

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5.1 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6,577,323 Jamieson et al. discloses a Graphical User Interface for controlling an industrial process in real-time (Figures 1-11).

5.2 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwain M. Craig whose telephone number is (571) 272-3710. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul L. Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC


Paul L. Rodriguez 3/6/06
Primary Examiner
Art Unit 2125